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at Peradeniya occurs in the driest part of the year (all of which is very wet). To account for this, he suggests that it is only in the drier period that the transpiration stream can supply enough salts! Then on this assumption he erects another: "If this be the case, the higher internal temperature attained by the coloration of young leaves would promote the same object, viz., the increase of the transpiration stream." All of which is an excellent example of spoiling good observations by bad logic.—C. R. B.

**Sex in dioecious plants.**—A study of the two mitoses by which the microspores are formed from the mother cell in *Acer negundo* has led DARLING<sup>17</sup> to interpretations and conclusions about which there may be considerable difference of opinion. He finds that all the chromatin of the resting nucleus of the microspore mother cell is contained in the nucleolus. Chromatin from the nucleolus diffuses upon the linin and in this way there is built up a spirem which segments into eight chromosomes. Later, five more chromosomes are formed from the nucleolus, so that, all together, there are thirteen chromosomes formed in these two ways. After the second mitosis, two of the daughter nuclei differ from the other two in containing one more chromatin mass, but when the resting stage is reached, the four nuclei look alike.

The writer believes he has found something somewhat analogous to the maturation mitoses in some insects, and that the peculiarities in *Acer negundo* have some connection with the determination of sex.

The fact that the division of the chromosomes at the second mitosis could not be determined with certainty would indicate that the technic was hardly sufficient to establish the claim that the eight and five chromosomes originate differently. The problem, however, is important and the presentation of results suggestive.—CHARLES J. CHAMBERLAIN.

**Chlorophyll of seeds.**—MONTEVERDE and LUBIMENKO, working independently, have arrived at the same conclusion regarding the green pigment of the seeds of thirty-eight Cucurbitaceae, viz., that it is not chlorophyll, but that it resembles the protochlorophyll of etiolated leaves.<sup>18</sup> Yet neither in the living nor the dead hulls does it go over, under the influence of light, into chlorophyll. It appears rather late in the development of the seed, in chromatophores which are indistinguishable from chloroplasts and may even contain chlorophyll also. Its absorption spectrum differs in certain details from that of living green leaves. They propose to call this new pigment chlorophyllogen, retaining the name protochlorophyll for the optically altered chlorophyllogen which one can observe in dead tissues and neutral solutions. This chlorophyllogen becomes transformed into chlorophyll under the influence of light plus some other yet unknown factor

<sup>17</sup> DARLING, CHESTER ARTHUR, Sex in dioecious plants. Bull. Torr. Bot. Club 36: 177-199. pls. 12-14. 1909.

<sup>18</sup> MONTEVERDE, N., UND LUBIMENKO, W., Ueber den grünen Farbstoff der inneren Samenhülle einiger Cucurbitaceen und dessen Beziehung zum Chlorophyll. Bull. Jard. Imp. Bot. St. Petersbourg 9: 27-44. 1909. (Russian: German résumé.)